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ABSTRACT

Productivity of University of Wyoming (UW) subject bibliographers can be significantly increased by developing a network of microcomputer-based workstations with custom and off-the-shelf software; telecommunications to CARL (Colorado Alliance of Research Libraries), OCLC, and other databases; and a network server to provide special services and information. Goals of the workstation network include making access to online files more convenient, shifting from paper to electronic media, creating custom databases to allow better management of selection, automating procedural activities so that they do not require bibliographer intervention, and preparing for collection development in an increasingly cooperative environment. This paper proposes general hardware and software requirements for both the workstation and network server, as well as a lengthy, classified list of network capabilities. The effects of the workstation network on faculty members and the library acquisitions department are considered. Steps in considering the bibliographer's workstation and options for funding its implementation are presented. (Contains 8 references.) (Author/MES)

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A Conceptual Exploration of a Bibliographer's Workstation Network

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Summary

Productivity of University of Wyoming (UW) subject bibliographers can be significantly increased by developing a network of microcomputer-based workstations with custom and off-the-shelf software; telecommunications to CARL, OCLC, and other databases; and a network server to provide special services and information. Goals of the workstation network include making access to online files more convenient, shifting from paper to electronic media, creating custom databases to allow better management of selection, automating procedural activities so that they do not require bibliographer intervention, and preparing for collection development in an increasingly cooperative environment. Authors propose general hardware and software requirements for both the workstation and network server as well as a lengthy, classified list of network capabilities. Briefly consider the consequences of the workstation network upon faculty members and the Acquisitions Department as well discuss the effect of technology upon such networks. Concludes with presenting next steps in consideration of the bibliographer's workstation network and options for funding its implementation.

A Conceptual Exploration of a Bibliographer's Workstation Network

Originally, computer workstations[1] were found only in engineering or the sciences and were characterized by expensive, high-powered minicomputers or terminals connected to mainframe computers; by extensive graphic applications (such as computer-assisted design [CAD]); and by performing multiple tasks simultaneously. As microcomputer processing speed and storage capacity increased, costs dropped and nontechnical workstations began to appear. The scholar's workstation, widely discussed in computer, higher education, and library literatures,[2] is typically a microcomputer connected to local and national information networks with other peripherals such as printer, CD-ROM drive, or fax board as needed to allow its user to do most of his or her research in one place. Over the last several years, libraries have seen the development of several special function workstations for activities such as database searching, interlibrary loan, and cataloging.[3] In

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[1]"Workstation" has numerous definitions; in this paper the term is used to mean microcomputer-based network nodes with the ability to manipulate and store data locally.

[2]Sample citations include: Matthew B. Gilmore and Donald O. Case, "Historians, Books, Computers, and the Library," Library Trends 40 (4) Spring 1992: 667-686; Donald N. Langenberg, "Supporting the Global Scholar," Academic Computing 3 (5) Jan. 1989: 12-16; and Barbara B. Moran, and others, "The Electronic Campus: The Impact of the Scholar's Workstation Project on the Libraries at Brown," College and Research Libraries 48 (1) Jan. 1987: 5-16.

[3]Samples of general library literature include: Michael Bauer, "The Emerging Role of Workstations in the Library Environment," Library Hi Tech 6 (4) 1988: 37-46; James Nolte, "The Electronic Library Workstation--Today," Computers in Libraries 10 (9) Oct. 1990: 17-20; Pieter A. van Brakel, "The Electronic Workstation: Challenges for the Information Specialist," Electronic Library 9 (4-5) Aug.-Oct. 1991: 211-215; Erwin K. Welsch, "Microcomputers and Workstations in Libraries: Trends and Opportunities," Computers in Libraries 10 (9) Oct. 1990: 9-14; and Kieth C. Wright, Workstations and Local Area Networks for Librarians (Chicago: American Library Association, 1990). Examples of specialized library applications include: Henry Beecher, "Public Access Workstations in the Library: New Trends," Wilson Library Bulletin 65 (6) Feb. 1991: 52-54; Richard Entlich, and others, "Enhancing the Processing Environment: The Development of a Technical Services Workstation," Information Technology and Libraries 11 (4) Dec. 1992: 324-338; Mary E. Jackson, "Using Ariel, RLG's Document Transmission System to Improve Document Delivery in the United States," Interlending and Document Supply 20 (2) April 1992: 49-52; and Betsy N. Hine, "Automated Workstations for Professional Catalogers: A Survey of 100 Non-ARL Academic Libraries," Library Resources & Technical Services 36 (1) Jan. 1992: 96-104.

this paper, the workstation concept is applied to collection development and specifically the work of the subject bibliographer.

The Conceptual Framework

Our conception of the bibliographer's workstation network is influenced by three sources: the literature on the scholar's workstation, library literature on a bibliographer's workstation, and an analysis of our own situation (including needs and possibilities). Our point of departure was Weissman's identification of 12 essential elements of the scholar's workstation:[4]

1. Provide windowing capability for multiple documents.
2. Integrate text and graphics when desired.
3. Support multimedia (sound, graphics, text).
4. Support complex documents with many parts.
5. Permit multitasking operations.
6. Accommodate large, fast mass storage devices.
7. Include connectivity to external databases.
8. Include electronic mail capabilities.
9. Support data acquisition devices (scanners, etc.)
10. Address substantial amounts of memory.
11. Permit the user to customize the environment readily.
12. Offer enough speed to permit intensive processing.

Besides verifying the minimal use of automation in collection development, the library literature contributes two think pieces and one pilot development about a selector's or a bibliographer's workstation.

Sasse and Smith discuss a bibliographer's workstation within the notion of a "just-in-time" manufacturing scheme, current automation trends, and the development of local library systems.[5] The authors survey the possibilities for automated selection, needs for more extensive cooperative collection development, and the consequences of collection development automation upon technical services in general.

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[4]Ronald F. E. Weismann, "From the Personal Computer to the Scholar's Workstation," Academic Computing 3 (3) Oct. 1988: 10-14, 30-41.

[5]Margo Sasse and Patricia A. Smith, "Automated Acquisitions: The Future of Collection Development," Library Acquisitions: Practice & Theory 16 (2) 1992: 135-143.

Welsch speculates on the possibilities of networked "selector's workstations."[6] This article is valuable for its description of specific functions (from which the authors have borrowed extensively), its discussion of the possible electronic relationship between bibliographers and faculty members, and its healthy skepticism about automation being a panacea.

Meador and Cline discuss the development, at Southwest Missouri State University, of a Macintosh-based system with Apple Computer's assistance.[7] The workstation helps the bibliographer to make selection decisions through access to four types of data: bibliographic (such as the library's and other libraries' catalogs), critical and contextual (such as the library's collection development policies, statistical data on circulation, etc.), financial (such as departmental allocations, book price indices, etc.), and commercial (such as BIP+, vendors' databases, etc.).

Our own analysis of the University of Wyoming suggested some situations that had much in common with other libraries' experience: static materials and equipment budgets, part-time subject bibliographers assigned to work with all teaching departments, and minimal automation in collection development. We also recognized several special situations: the Libraries used the CARL library system developed in cooperation with other regional libraries; the campus was experimenting with a common Campus Wide Local Area Network (LAN); the Libraries were actively participating in cooperative collection development (primarily within the CARL Alliance); and the Libraries encouraged the faculty to request library services through electronic mail.

From the foregoing, we determined that the primary purpose for discussing a bibliographer's workstation network would be to make subject bibliographers more productive. Several basic approaches may be used to save bibliographers' and the Collection Development Office staff's time:

- making access to online files more convenient, such as the CARL online public access catalog (OPAC) and other subsystem files, Faxon's Source, and Books in Print+ (BIP+);

- shifting from paper to electronic media, including downloading online records for submission as orders, avoiding maintenance of paper files (like Subject

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[6]Erwin K. Welsch, "Back to the Future: A Personal Statement on Collection Development in an Information Culture," Library Resources & Technical Services 33 (1) Jan. 1989: 29-36.

[7]John M. Meador, Jr. and Lynn Cline, " Displaying and Utilizing Selection Tools in a User-Friendly Electronic Environment," Library Acquisitions: Practice & Theory 16 (3) Fall 1992: 289-294.

Bibliographer Manual, photocopies of titles ordered, etc.), and using electronic mail for internal and external communication;

- creating custom databases to allow better management of selection, such as desiderata files,[8] departmental interest profiles,[9] and bibliographic maps for specific disciplines;

- automating procedural activities so they do not require bibliographer intervention, such as checking orders against the online catalog, backing up datafiles, generating selective dissemination of information (SDI) bibliographies, etc.; and

- preparing for collection development in an increasingly cooperative environment, such as developing consolidated collection policy statements, maintaining name/address files of counterparts at other libraries, and accessing consolidated collection assessment data.

Implementing these goals and activities will require a network of sophisticated workstations with custom and off-the-shelf software; telecommunication linkages to campus, regional, and national networks; and support of a network server with special computer peripherals and software. Since some bibliographers are computer novices, it would probably be useful to develop an easy-to-use front-end program to automate routine tasks and integrate the various network components.

Description of the Bibliographer's Workstation Network

In a library relying upon PC-compatible hardware, the minimal computer would be an 8088 or 286; multitasking requires at least a 386.[10] Other minimal workstation components include a monochrome monitor; a modem and/or hardware connection to the campus telecommunications network or LAN; and a dot-matrix printer. Essential software

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[8]Normally this term is used for items to be purchased when funds are available; for this paper we would add other types of records such as items being considered for purchase or out-of-print items.

[9]See for example, Jeanne M. Richardson, "Faculty Research Profile Created for Use in a University Library," Journal of Academic Librarianship 16 (3) July 1990: 154-157.

[10]Eric Flower, "80386-Based PCs: A Workstation Strategy for the Nineties," Computers in Libraries 9 (8) Sept. 1989: 13-14; Nolte, "Electronic Library Workstation," and Welsch, "Microcomputers and Workstations." Most application software working on such machines requires significant amounts of RAM; a minimum of 2-4 megabytes is recommended. Hard disk storage must also be large; 80-120 megabytes is probably the minimum.

includes a front-end program to integrate and make network features easy to use; a sophisticated telecommunications package;[11] and standard productivity packages for word processing, spreadsheets, and database management. Additionally, the bibliographer must have a suitable workspace, including table, adjustable chair, power strip, and, possibly, printer stand. Desirable hardware includes: a pointing device, like a mouse, and a VGA color monitor (especially for displaying layered windows). Desirable software includes: a graphic interface to reduce staff training (such as Windows 3.1)[12] and bibliographic database software.

Such a workstation must be part of a network anchored by a very fast, multitasking, multiuser server[13] with a large hard disk. An alternative is the Novell LAN with microcomputer servers to provide similar storage and response time.[14] Minimum LAN software would require security features; sharing of hard disks, printers, and other peripherals; audit trails; electronic mail; disk caching; CD-ROM drive support; etc. Specific capabilities discussed below may require this platform to run several peripherals or specialized software.

Possible Functions of the Bibliographers Workstation Network

The following is a preliminary list of potential capabilities of the proposed bibliographer's workstation, given our understanding of current technology. Categories have been used to sort functions that separate related capabilities; however, we felt the list was overwhelming otherwise (see diagrams in Appendices). Each item includes a priority

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[11]It should be capable of automatically logging on to a variety of online sources, including the emulation of a variety of terminals. Additionally, to save bibliographer time it should allow running scripts to automate routine operations.

[12]The convenience comes at some cost: need for more RAM, more hard-disk capacity, and video accelerator technology.

[13]This would probably be dedicated to several server roles, as defined by William Saffady in "Local Area Networks: A Survey of the Technology," Library Technology Reports 26 (1) Jan./Feb. 1990: 45-46, including file server (provides storage of a number of common files), print server (manages requests to print from a laser printer), application server (provides special functions needed by workstations), and, possibly, communications server (manages telecommunications beyond the LAN).

[14]The difficulty of tying together bibliographers located in four separate buildings argues for using the campus wide local area network. This service provides the latest versions of a number of productivity software (WordPerfect, Lotus 1-2-3, dBASE IV, Harvard Graphics, etc.), shared laser printers, common e-mail and calendar software, and saves the Collection Development Office from managing the LAN software. The downside includes limited common storage space and reduced flexibility in developing the network.

code based upon the following ranking: 1 = essential, 2 = important, and 3 = desirable.[15] Finally each item includes general notes and indications of additional hardware or software requirements. Several diagrams are provided in the appendices of proposed structure and capabilities: Appendix A is a possible structure of the network, Appendix B is a list of desirable capabilities of the bibliographer's workstation, and Appendix C is a list of desirable capabilities of the network server.

1. Accessing UW Databases

Understandably, information on our own institution or library holdings is the foundation for collection development. While possibly not as important as for remote databases, there is still a need to download data into databases or spreadsheets.

1.1. UW CARL databases (1): The workstation should provide access to University of Wyoming (UW) databases on CARL. The Libraries use the CARL system to house bibliographic, check-in, on-order, and other information. It is possible to reach the CARL online catalog through terminal emulation software; it would be necessary to emulate a NEWPX terminal to use other subsystems.

1.1.1. CARL online catalog (1): The UW catalog is useful for verifying UW holdings and titles that are on-order.

1.1.2. CARL Acquisitions module data (1): The UW Acquisitions module yields more detailed information for on-order items than is available in the online catalog, provides information on the status of specific funds, and allows generation of custom reports.

1.1.3. CARL Serials module data (1): The UW Serials module allows one to search for status of titles, payment information, title changes, information about serials cancellation projects, etc.

1.1.4. CARL Circulation module data (1): The UW Circulation module is a useful aid for selection if CARL allows the generation of custom circulation reports by defined call number ranges.

1.2. Subject Bibliographer Manual (1): The workstation should provide access to the training and reference manual generated by the Collection Development Office. This feature would save considerable staff time in producing and filing updates.

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[15]These codes are current perceptions. What is seen as desirable today may tomorrow be seen as essential.

1.3. Departmental spreadsheets (1): The workstation should provide access to spreadsheets, generated by the Collection Development Office, which contain information on a teaching department's demographics, resources, costs, and use data. Savings of production and filing time would result. This would require a common spreadsheet program (probably with custom macros to aid analysis).

1.4. Collection development policies (1): The workstation should provide access to general and separate disciplinary policies that should be indexed for quick information retrieval.

1.5. Course offerings with number of students (2): The workstation should provide access to Office of Institutional Analysis information on current instructional activities and also Course Review Committee decisions. Such information could be useful in analyzing requests. Undoubtedly, there would be security issues to surmount.

1.6. Current collection development information (2): The workstation should provide current information to bibliographers through the work group E-mail capability in LAN software.

1.7. Interlibrary loan data (2): The workstation should provide downloaded data from the interlibrary loan recordkeeping system that could then be input into departmental spreadsheets (see 1.3 above) and would allow analysis of borrowing patterns when making purchase decisions, etc.[16]

1.8. Collection development training modules (2): The workstation should provide computer-assisted instruction to meet some routine training needs. The ability to carry out training over the network will probably require instructional or expert system software and staff time to develop the necessary modules.

1.9. Preservation notes/preservation database (2): The workstation should provide access to local bibliographic records that allow the addition of preservation codes and the generation of preservation problems lists. This requires limited access to an as-yet-undefined field and using as-yet-undefined codes. Consolidation of data on local and consortium levels is also necessary.

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[16]See arguments of Julie E. Wessling, "Benefits from Automated ILL Borrowing Records: Use of ILLRKS in an Academic Library," RQ 29 (2) Winter 1989: 209-218.

2. Accessing Remote Databases

To assist in routine selection, the bibliographer's workstation needs to be able to search a variety of non-UW databases, like those indicated below. This assumes the capability to download records and, using filter programs, generate electronic orders or store in personal files.

2.1. Online catalogs of other libraries (1): The workstation should provide access to other online catalogs, particularly from cooperating libraries such as those in the CARL consortium and should include on-order records.

2.2. UnCover (1): The workstation should provide access to UnCover, a periodical table of contents service produced by CARL. It is an important tool for the bibliographer for keeping up with current trends both in assigned subject areas and in areas of research interest. Downloading will require a filter program for entering data into local files (see also 4.4. and 5.10. below).

2.3. Online versions of selection tools (2): The workstation should provide access to tools such as Choice, Books for College Libraries, etc. Some may be mounted on CARL or may be furnished by another database vendor with a resulting increase in costs; adding CD-ROM products to the network server is discussed in 5.5. below.

2.4. Other online databases (2): The workstation should provide access to a wide variety of databases that may be installed either on CARL or local UW platforms, including CD-ROM.

2.5. OCLC database (2): The workstation should provide access to OCLC when CARL is insufficient. This requires a policy decision to use either PRISM, EPIC, or FirstSearch which is apt to be based largely on the question of online charges.

2.6. Automated database searching through Dialog, BRS, OCLC, etc. (2): The workstation should provide the ability to perform database searching through major vendors. If a greater burden for database searching shifts to bibliographers, automated logons should make that responsibility easier. This requires the assistance of the database searching coordinators.

2.7. Faxon's Source database (2): The workstation should provide access to these serial databases to which CARL currently has a gateway. Access should be automated.

2.8. Blackwell North American's National Titles Online (NTO) or National Titles As Slips (NTAS) databases (2): The workstation should provide access to either of these databases. The Libraries have access currently to NTO through the Internet.

This could prove to be an inexpensive alternative to BIP+.

2.9. Names/addresses of bibliographer counterparts at cooperating libraries (2): The workstation should enable the bibliographer to ask counterparts what they will do with expensive or very specialized titles. A centralized file at CARL would be preferable but it might be possible to maintain such a file on a UW server. It would be desirable to have a connection between this file and electronic mail.

2.10. Collection overlap studies or citation studies (2): The workstation should provide access to studies among cooperating libraries, primarily CARL libraries. Special software and central storage should be made available by the CARL Alliance.

2.11. Collection analysis databases (2): The workstation should provide access to databases such as RLG Conspectus and National Shelflist Count which allow comparison of local collections to other libraries. Files may be available either online or on CD-ROM.

2.12. Remote files through Internet (2): The workstation should provide access to files used occasionally through a combination of automated logon and a local Gopher. Citations to these resources should be added to bibliographic maps (see 4.5 below).

2.13. Policies of cooperating libraries (3): The workstation should provide access to collection development policies of other CARL libraries. This assumes a standard collection policy format and central storage at CARL. CARL Alliance members have expressed some interest in this.

3. Communicating Electronically

There is a need to communicate through electronic mail with constituents, colleagues, the Collection Development Office, and even bibliographer counterparts at cooperating libraries. Often, these messages need to be captured for referral or loaded into local files; in others, entire transactions could be automated (like downloading electronic mail messages).

3.1. Book requests from faculty members and others (1): The workstation should provide the ability for patrons to convey suggestions for purchases to the bibliographer electronically. Use of a template would be more efficient than freeform electronic mail requests. These could be stored in the bibliographer's desiderata file (see 4.1 below) or transmitted to Acquisitions for ordering (see 3.2. below).

3.2. Authorization and transmission of orders (1): The workstation should provide the bibliographer with the ability to electronically authorize orders and transmit them to the Acquisitions Department. This requires the development of a small program to code and date orders, transmit them to Acquisitions, and, possibly, save them in workstation on-order files (see 4.1 below).

3.3. Referral of requests to other subject bibliographers (1): The workstation should provide the bibliographer with the ability to refer any purchase request to a colleague. Development of a small program to identify orders as referrals and to transmit them to other bibliographers' workstations is required.

3.4. Internal communication (1): The workstation should provide the bibliographer with the ability to correspond with other subject bibliographers or with the Collection Development Office.

3.5. Faculty interests (1): The workstation should provide the bibliographer with the ability to identify items of interest to specific faculty members for ordering and to electronically notify them of orders. Initially, it should be possible to use the referral program discussed in 3.3 above but transmit messages to appropriate faculty members. Ultimately, it is preferable to interconnect individual faculty interest profiles with current ordering and periodically generate batch files that can be transferred to faculty members.

3.6. New serial requests (1): The workstation should provide the bibliographer with the ability to submit new serial title requests to the Collection Development Office and automatically create a file of current requests on the server. This requires a small program with a template and a processing program on the network server.

3.7. Budget requests (1): The workstation should provide the bibliographer with the ability to submit annual budget requests to the Collection Development Office and automatically create a file of current requests on the server. This requires a small program with a template and a processing program on the network server.

3.8. Approval plan profile changes (2): The workstation should provide the bibliographer with the ability to request changes in approval plan profiles of the Collection Development Office. This requires a small program with a template, access to profile display (see 5.9. below), and transmission to the network server.

3.9 Cooperative acquisitions queries (2): The workstation should provide the bibliographer with the ability to ask other bibliographers at cooperating libraries about expensive items and simultaneously add information to the appropriate desiderata file (see 4.1 below). This requires a small identification program, a

program to add to the desiderata file, and access to the electronic addresses of counterparts at other libraries (see 2.9. above).

4. Maintaining Personal Data

A key element of the bibliographer's workstation network is the ability to create, store, edit, and search local databases. While it is possible to store these files on the network file server, it is desirable that individual files be distributed throughout the network.

4.1. Personal on-order or desiderata files (1): The workstation should provide the bibliographer with the ability to easily create working files for each department using standard bibliographic database software. It might be easiest to include several such files as part of the installation of new workstations. For the bibliographer's peace of mind, there is a need for on-order files. Easy access to central acquisitions files might eliminate this need.[17] Some way (preferably automated) of purging files after receipt is required.

4.2. Departmental information interest files (1): The workstation should provide the bibliographer with the ability to create interest files for individual faculty members and departments (see selective dissemination of information requests in 4.4. below). This feature probably requires that a uniform structure be included in the software of every workstation to allow access by supporting programs.

4.3. Numeric data (1): The workstation should provide the bibliographer with the ability to download numeric data into local spreadsheets for manipulation and analysis. Initially, it should be possible to transfer selected elements of datafiles that are available on the network server to local spreadsheets. A menu structure should ease the learning curve on spreadsheet software and might include some standard analyses. A higher level of expertise is necessary for nonstandard spreadsheets and analyses.

4.4. Selective dissemination of information (SDI) (2): The workstation should provide the bibliographer with the ability to create SDI profiles for individual faculty members. These could be run periodically from the UnCover database. Preferably, this would be a service provided by CARL. In absence of such, it requires a standard format to be submitted to the network server (see 5.10. below).

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[17]However, if bibliographers would be using this data to analyze purchasing patterns or to notify faculty when items are ordered, received, or cataloged it would be an ongoing network function.

4.5. Bibliographic maps to local and remote resources (2): The workstation should provide the bibliographer with the ability to create working files of major indexing and abstracting services (whether available locally or electronically), other important reference tools, significant articles on disciplinary literature, datafiles available through Internet or other networks, etc. Having a good understanding of disciplinary literature is important when working with departmental faculty members.

5. Network Capabilities

The bibliographers' workstations are supported by a variety of special functions and files available from the network server, probably managed by the Collection Development Office.

5.1. Security (1): The workstation should provide security for the individual bibliographer and for central collection development files. Increasing reliance upon electronic data requires the addition of security software on all workstations and the network server. The extensive use of telecommunications proposed for the workstations argues for periodic or memory-resident virus detection software.

5.2. Backup (1): The workstation should provide automatic backups for the individual bibliographer and for central collection development files. The importance of the data argues for quick and automatic backup of files, probably after normal working hours. This would require a tape backup drive and supporting network software.

5.3. Names/addresses of department heads and faculty liaisons (1): The workstation should provide a list of names and addresses of departmental faculty members involved in collection development work. This would allow the generation of mass mailings, including electronic mail. Periodic communication with departments requires current files with easy updating capabilities for bibliographers. This assumes that the word processing package will include a mail merge capability.

5.4. Collection development budget (1): The workstation should provide budget history and various models or formulas (requires access to departmental spreadsheets) to help in budget allocation. It should provide a read-only capability to the bibliographer's workstation. A bridge to the acquisitions system should be included to allow comparison of budgets to expenditures and allocation request files (see 3.7 above).

5.5. Access to BIP+ on CD-ROM (1): The workstation should provide access to such bibliographic tools as BIP+. This requires the addition of a CD-ROM drive and network software on the server. This would allow the bibliographer to download

records for processing or for analysis at the workstation and, ultimately, generation of electronic orders.

5.6. Manage network printers (1): The workstation should provide for the management of printers. While electronic communications will be common, printed reports and letters will still be necessary and laser printers with network queue management would be desirable.

5.7. Bibliographies, catalogs, requests, and historical documents in machine-readable format (2): The workstation should provide the bibliographer with the ability to convert print documents to machine-readable files. This requires a desktop scanner to digitize data and character recognition software to generate ASCII files or original documents. The bibliographer needs the capability to easily mark authors, titles, and omit unnecessary data. Significant computing time is required, so it may be desirable to use another high speed machine. Alternatively, operations could be shifted to evening hours when bibliographers are not normally using the network.

5.8. Easy checking of machine-readable lists (see 5.7. above) (2): The workstation should provide the bibliographer with the ability to check lists against the local online catalog (and on-order files), add a result code (and/or call number if owned), and transfer the information to the bibliographer. A program is necessary to search items consistently (for example, word followed by name-word and title searches) and should allow the bibliographer to indicate preferences in terms of what happens after the list is checked.

5.9. BNA approval profiles (2): The workstation should allow maintenance of BNA approval book profiles as central files and allow the bibliographer to request changes. The Collection Development Office must obtain or compile a consolidated subject listing. The bibliographer should have read-only access and a separate program to request changes in a profile (see 3.8. above).

5.10. SDI profiles (2): The workstation should provide the bibliographer with the ability to routinely run SDI profiles and transmit the results to appropriate faculty members. Using bibliographer-generated profiles (see 4.4. above), a small program is necessary to run against UnCover during non-peak times and transmit the results to faculty members electronically. Printouts should be generated for faculty without workstations.

5.11. Project manager software (2): The workstation should provide the bibliographer with access to a project manager on the network server and allow use from the workstation. It should also provide network access to project files (such as a serials cancellation schedule).

5.12. Graphics software (2): The workstation should provide access to a graphics program on the network server and should allow use from the workstation. Its uses include addition of graphs, charts, etc. to word processing files or electronic mail.

5.13. Information from assigned departments (2): The workstation should provide the bibliographer with the ability to solicit information on changes in faculty, programs, etc. Using address files (see 5.3. above), the Collection Development Office could periodically query departments on changes, the information from which would be transferred to bibliographers to allow contacting new faculty members, etc.

5.14. Data from the Office of Institutional Analysis (2): The workstation should provide the ability to obtain data on faculty research/scholarship. Electronic access would ease downloading data for distribution to individual workstation use.

5.15. Analyze system use (2): The workstation should provide the ability to periodically review demand on the network server, file storage on workstations, access to off-campus resources, etc., in order to determine needs for new features or to document use (in case of grant funding).

5.16. Automated selection (3): The workstation should provide an expert system shell program to capture elements of the selection decision process.[18] Experimentation with this feature has the possibility not only to improve selection but to modify the entire bibliographer's workstation network idea.

6. Personal Productivity

An additional benefit of the bibliographer's workstation is providing most library faculty members with standard application software needed to increase productivity in all elements of their jobs.

6.1. Word processing, including desktop publishing (1): The workstation should provide access to WordPerfect 5.1 or a similar word processing package. This would allow spooling of print requests on laser printers (with PostScript and many resident fonts) on the network print server.

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[18]Discussion in Mark Johnston and John Weckert, "Selection Advisor: An Expert System for Collection Development," Information Technology and Libraries 9 (3) Sept. 1990: 219-225; Sasse and Smith, "Automated Acquisitions;" Charles W. Brownson, "Mechanical Selection," Library Resources & Technical Services 32 (1) Jan. 1988: 17-29; and John C. Calhoun, and others, "Modeling an Academic Approval Program," Library Resources & Technical Services 34 (3) July 1990: 367-379.

6.2. Personal calendars (2): The workstation should provide the ability to maintain personal appointment schedules and calendars. Common usage would help in scheduling meetings, substitute approval reviews, etc.

6.3. Database management software (1): The workstation should provide access to database management software for nonbibliographer functions, besides the custom database applications described above.

6.4. Spreadsheet software (1): The workstation should provide access to spreadsheet software for nonbibliographer functions.

6.5. Microsoft's Bookshelf of standard reference tools in CD-ROM (3): The workstation should provide access to this group of reference tools. It requires the addition of a CD-ROM drive and software to the network server and would allow use while using other procedures, such as word processing, at workstations.

Effects of the Bibliographer's Workstation Network on Non-Collection Development Personnel

Since subject bibliographers routinely coordinate their work with members of the teaching faculty and Acquisitions staff, it is reasonable to speculate about how the implementation of the bibliographer's workstation network would affect them.

Effects on the Teaching Faculty

Outside of improvement in the efficiency of the ordering process, teaching faculty members will be affected in direct proportion to the extent to which the faculty members or their designated departmental library liaisons are "wired." For the faculty member who is connected to the campus network, he or she could:

- Request materials to be ordered by filling out a request template and transmitting it to bibliographers.
- Be notified after items have been received and processed.
- Request materials to be put on reserve.
- Request or update selective dissemination of information from bibliographers.
- Download CARL bibliographic and UnCover records into local files.

- Request items to be borrowed or photocopied by the Libraries' document delivery service.

- Request information on the status of an order, budgets, or other aspects of library practice.

Electronic communication with subject bibliographers could eliminate much of the current telephone tag.

Some of these capabilities go beyond the bibliographer's workstation network into development of the scholar's workstation and the foregoing represents just the interests of collection development. Other library units might have similar expectations that collectively could promote greater electronic communication with the Libraries.

Effects on the Acquisitions Department

The shift from paper to electronic orders, and many of the proposed network's other features, will have a significant impact on the Acquisitions Department. At a minimum, Acquisitions will need one bibliographer's workstation so they can receive the flow of orders and access the network server and individual bibliographer's workstations. Development of acquisitions workstations to efficiently handle electronic orders, including pre-order searching, receipt, etc. may be in order. Templates and pre-order searching modules should involve Acquisitions staff to assure that they mesh well with procedures. While not convinced that bibliographer's workstations would have the overwhelming consequences that Welsch predicts, it is probably wise to be aware of what he said:

> ... A third keystroke would transmit the orders either to the Library's centralized acquisitions department or directly to a vendor for delivery to the library. Implementation of an electronic acquisitions system has the capacity for dramatically changing the way a library acquires and distributes materials. Because of this change, the centralized models we have used may no longer be functional. Closer joining of selection and acquisition processes, in a highly decentralized system that would include sending a shelf-read book directly to a branch library or an individual librarian's office, is now more logical.[19]

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[19]Welsch, "Back to the Future," p. 32.

A Conceptual Exploration of a Bibliographer's Workstation Network

Effect of New Technology on the Bibliographer's Workstation Network

Not only does the bibliographer's workstation network affect bibliographers, faculty members, and library departments, the network is influenced by evolving technologies. New functions will arise as we gain experience with the proposed network, particularly as the network is upgraded or augmented by developments in hardware and software. David Raitt's article on new technology in information environments[20] raises some interesting possibilities that may find their way into the network when technically and economically feasible. These include voice recognition, compact disk-interactive (CD-I), or WORM mass storage devices. Moving from a DOS operating environment to Windows, Windows for Work Groups, or Windows NT has both expected and unexpected consequences. We suspect the attempt to improve productivity of bibliographers will be a continuing development effort for the foreseeable future.

Where Do We Go from Here?

We suspect that our concept of a bibliographer's workstation network may exceed what is possible, both economically and technically. Therefore, the first thing we want to do is to perform a reality check with the Associate Director of Libraries and the Collection Development Committee. Essential questions include: is the network feasible and will the increases in bibliographer productivity be worth the investment of resources? Based on the results of those consultations we have several options:

- Try to develop a barebones network from existing UW library funds and try to include necessary CARL components in the Alliance's Master Service Agreement. By the end of the 1992/94 biennium, there may be other working examples of bibliographer's workstations on which to model. The downside is that we probably will not get all requested funds. That may put the project on hold or allow only a pilot project (leaving the Libraries to come up with rest of funds later).

- Approach CARL about a cooperative development venture. We may be able to reduce the UW investment and assure that CARL-related features are made available. We would think that the addition of bibliographer's workstation networks to the CARL system would be useful for marketing (development of similar cataloging and acquisitions workstations would be even better). The downside is lack of interest from CARL or the expectation that UW

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[20]David Raitt, "The Potential of New Technology in Information Environments," Microcomputers for Information Management 6 (2) June 1989: 99-112.

would fund all development costs.

- Attempt to get grant funding to at least acquire microcomputer equipment and develop a pilot project. To attract outside funding, the project may have to focus on cooperative collection development aspects and involve one or more other CARL libraries. UW Libraries would have to come up with matching funds or funds to expand it to all subject bibliographers. Granting agencies may not see the idea as one they want to fund.

- Drop the idea as impractical and wait for CARL or another vendor to develop a workstation with suitable capabilities.

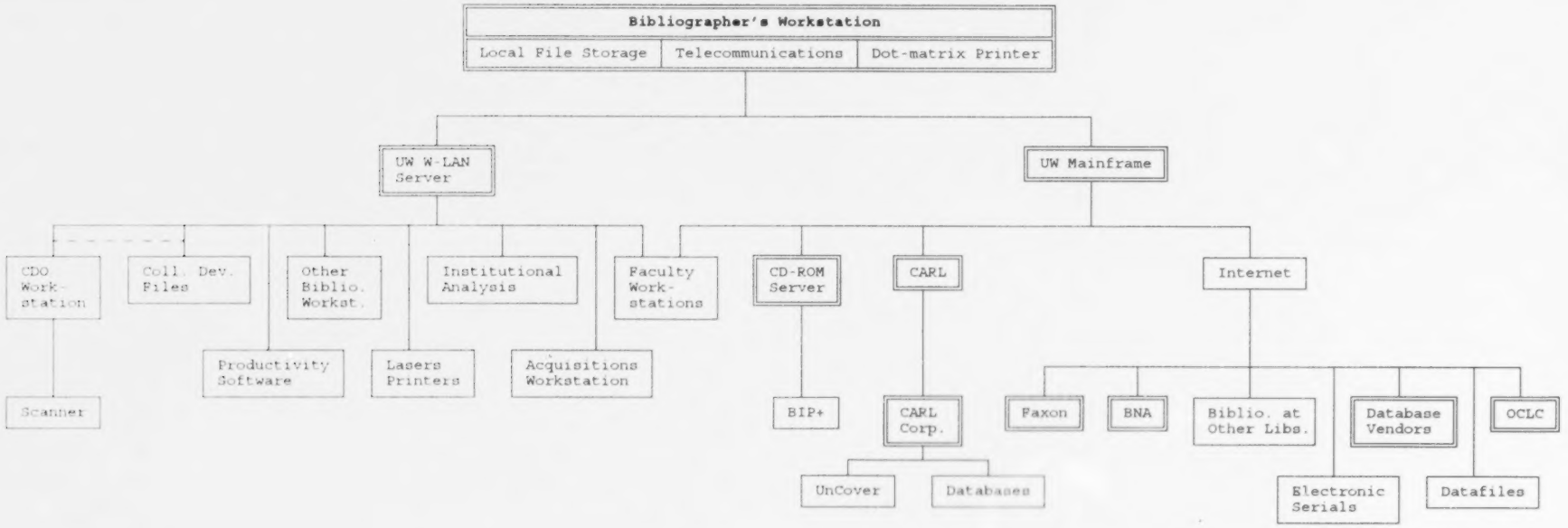
We suspect that experimentation with a bibliographer's workstation network like that described above will provide two additional benefits: 1) research and publication opportunities for those involved in collection development, and 2) the specially developed software might bring some commercial return to the University.

Drafted 4/10/91, revised 7/16/93, 4/18/94

A Conceptual Exploration of a Bibliographer's Workstation Network

Appendix A

Possible Structure of the Network



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A Conceptual Exploration of a Bibliographer's Workstation Network

Appendix B

Desirable Bibliographer's Workstation Capabilities

Bibliographer's Workstation			
SEARCHING	DATABASES	PRODUCTIVITY	PROCEDURES
UW catalog Other libraries' catalogs Faxon Source OCLC Bibliog. Manual UW coll. policies UW course data UW circulation data UW acquisitions data UW serials data Online selection tools Dialog, BRS, SDC, etc. BNA's NTO/NTAS CARL CD files Internet files	On-order files Desiderata files Faculty SDI profiles Faculty interest profiles Departmental interest files Disciplinary bibliographic maps Departmental spreadsheets	Word processing Desktop accessories Database management Bibliographic database mgt Spreadsheet Calendar Electronic mail Graphics	Download biblio. records to local files Transfer orders to Acquisitions Notify faculty of interesting items Refer requests to other SBs Request new serials Submit budget requests Request approval profile changes

A Conceptual Exploration of a Bibliographer's Workstation Network

Appendix C

Desirable Network Server Capabilities

Network Server(s)			
DATABASES	PROCEDURES	PRODUCTIVITY	OTHER
Biblio. Manual UW coll. policies Name/address files Departmental spreadsheets BIP+ CD budgets BNA approval profiles New course data	Convert documents to ASCII files Check potential orders in online catalog Training modules Running SDIs & sending results to faculty Automatically backup network files Expert system development Solicit information on departmental changes Solicit information on faculty publications Analyze system use	Project manager Graphics Desktop publishing Calendar DOS utilities	System security Electronic mail Audit trails Printer spooling Connection to UW network & Internet

A Conceptual Exploration of a Bibliographer's Workstation Network

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